

CLAIMS:

1. A method of controlling a diode laser device (203) which is operable to receive a control signal (202) and to output an optical signal (205) when the control signal (202) exceeds a threshold value, the method comprising:
 - 5 supplying, to the diode laser device as the control signal (202) and at a predetermined turn-on time, a bias signal having a value which exceeds the threshold value, characterised by supplying to the diode laser device (203), as the control signal (202) and at a predefined time before the predetermined turn-on time, a pre-bias signal, which has a magnitude less than the threshold value and extends for a time period, the predefined time, magnitude, and time period of the pre-bias signal determining a required output power profile 10 of the output optical signal (205).
2. A method as claimed in claim 1, wherein the pre-bias signal comprises a series of pre-bias pulses, having respective predefined times, magnitudes and extents, wherein the combination of the plurality of pre-bias pulses causes the output optical signal to have the required power profile.
 - 15 3. A method as claimed in claim 1, wherein the pre-bias signal is a stepped value.
 4. A method as claimed in any of claims 1 to 3, wherein the predetermined turn-on time is defined by a clock signal.
 - 20 5. A method as claimed in any of claims 1 to 4, wherein the predetermined turn-on time is determined by a required output power profile of the output optical signal (205).
 - 25 6. A method as claimed in any of claims 1 to 5, wherein the value of the pre-bias signal is determined by a required output power profile of the output optical signal (205).
 7. A method of controlling a diode laser device (203) in an optical system (200), the system (200) including a laser diode device (203) a controller (201), wherein the laser

diode device (203) is operable to receive a control signal (202) from the controller (201) and to output an optical signal (205) when the control signal (202) exceeds a threshold value, the method comprising:

- 5 supplying, to the diode laser device as the control signal (202) and at a predetermined turn-on time, a bias signal having a value which exceeds the threshold value, characterised by supplying to the diode laser device (203), as the control signal (202) and at a predefined time before the predetermined turn-on time, a pre-bias signal, which has a magnitude less than the threshold value and extends for a time period, the predefined time, magnitude, and time period of the pre-bias signal determining a required output power profile
10 of the output optical signal (205).

8. A method as claimed in claim 7, wherein the pre-bias signal comprises a series of pre-bias pulses, having respective predefined times, magnitudes and extents, wherein the combination of the plurality of pre-bias pulses causes the output optical signal to have the
15 required power profile.

9. A method as claimed in claim 7, wherein the pre-bias signal is a stepped value.

10. A method as claimed in any of claims 7 to 9, wherein the predetermined turn-on time is defined by a clock signal.
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11. A method as claimed in any of claims 7 to 10, wherein the predetermined turn-on time is determined by a required output power profile of the output optical signal (205).

- 25 12. A method as claimed in any of claims 7 to 11, wherein the value of the pre-bias signal is determined by a required output power profile of the output optical signal (205).

13. An optical system (200) comprising,
30 a controller (201) operable to output a control signal; and
a laser diode device (203) operable to receive a control signal from the controller (201), and to output an optical signal (205) when the control signal (202) exceeds a threshold value, wherein the controller (201) is operable to output to the laser diode device (203), as the control signal (202) and at a predetermined turn-on time, a bias signal having a value which exceeds the threshold value to the laser diode device (203),

- characterised in that the controller is operable to output to the laser diode device, as the control signal (202) and before the predetermined turn-on time, a pre-bias signal to the laser diode device (203), which pre-bias signal has a magnitude less than the threshold value and extends for a time period, the predefined time, magnitude, and time period of the pre-bias signal determining a required output power profile of the output optical signal (205).
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14. An optical system (200) as claimed in claim 13, wherein the controller (201) is operable to supply a pre-bias signal comprising a series of pre-bias pulses, having respective predefined times, magnitudes and extents, wherein the combination of the plurality of pre-bias pulses causes the output optical signal to have the required power profile.
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15. An optical system as claimed in claim 13,
wherein the controller (201) is operable to supply a multi-valued pre-bias signal to the laser diode device (203).
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16. An optical system as claimed in any of claims 13 to 15, wherein the controller is operable to output to the laser diode device as the control signal (202) and before the predetermined turn-on time, a pre-bias signal, which has a value less than the threshold value, and is defined by a clock signal of the system.
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17. An optical system as claimed in any of claims 13 to 16, wherein the controller is operable to output to the laser diode device as the control signal (202) and before the predetermined turn-on time, a pre-bias signal which has a value less than the threshold value, wherein the controller is operable to determine the predetermined turn-on time by a required output power profile of the output optical signal (205).
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18. An optical system as claimed in any of claims 13 to 17, wherein the controller is operable to output to the laser diode device as the control signal (202) and before the predetermined turn-on time, a pre-bias signal which has a value less than the threshold value, wherein the controller is operable to determine the value of the pre-bias signal by a required output power profile of the output optical signal (205).
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